

Applicants: Peter David East and Susan Elizabeth Brown
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Amendments to the Claims

This listing of claims will replace all prior versions and listings of claims in the application:

Listing of Claims

1. (Withdrawn-Currently Amended) A substantially purified peptide which comprises [a] consecutive amino acids, the sequence of which is selected from the group consisting of:
 - i) ~~an amino acid sequence as provided in SEQ ID NO:4,~~
 - ii) an amino acid sequence which is at least 80% identical to SEQ ID NO:4,
 - iii) ~~an amino acid sequence as provided in SEQ ID NO:5,~~
 - iv) an amino acid sequence which is at least 80% identical to SEQ ID NO:5,
 - v) ~~an amino acid sequence as provided in SEQ ID NO:48,~~
 - vi) an amino acid sequence which is at least 80% identical to SEQ ID NO:48,
 - vii) ~~an amino acid sequence as provided in SEQ ID NO:53,~~
 - viii) an amino acid sequence which is at least 80% identical to SEQ ID NO:53,
 - ix) a biologically active fragment of any one of i) to viii), and
 - x) a precursor comprising the amino acid sequence according to any one of i) to ix),
wherein the peptide exhibits antifungal and/or antibacterial activity.

2-4. (Deleted)

5. (Withdrawn) The peptide of claim 1 which is fused to at least one other polypeptide/peptide sequence.

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6. (Currently Amended) An isolated polynucleotide, the polynucleotide comprising [a] consecutive nucleotides, the sequence of which is selected from the group consisting of:

- i) ~~a sequence of nucleotides provided in SEQ ID NO:9 or SEQ ID NO:10;~~
- ii) ~~a sequence of nucleotides provided in SEQ ID NO:11;~~
- iii) ~~a sequence of nucleotides provided in SEQ ID NO:12;~~
- iv) ~~a sequence of nucleotides provided in SEQ ID NO:13;~~
- v) ~~a sequence of nucleotides provided in SEQ ID NO:50;~~
- vi) ~~a sequence of nucleotides provided in SEQ ID NO:51;~~
- vii) ~~a sequence of nucleotides provided in SEQ ID NO:55;~~
- viii) ~~a sequence of nucleotides provided in SEQ ID NO:56;~~
- ix) a sequence encoding a peptide comprising [a] consecutive amino acids, the sequence of which is selected from the group consisting of: [;]
 - a) ~~an amino acid sequence as provided in SEQ ID NO:4,~~
 - b) an amino acid sequence which is at least 80% identical to SEQ ID NO:4,
 - c) ~~an amino acid sequence as provided in SEQ ID NO:5,~~
 - d) an amino acid sequence which is at least 80% identical to SEQ ID NO:5,
 - e) ~~an amino acid sequence as provided in SEQ ID NO:48,~~
 - f) an amino acid sequence which is at least 80% identical to SEQ ID NO:48,
 - g) ~~an amino acid sequence as provided in SEQ ID NO:53,~~
 - h) an amino acid sequence which is at least 80% identical to SEQ ID NO:53,
 - i) a biologically active fragment of any one of i) to viii), and
 - j) a precursor comprising the amino acid sequence according to any one of i) to ix);

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x) a sequence of nucleotides which is at least 80% identical to SEQ ID NO:9, SEQ ID NO:10, or SEQ ID NO:12;
xi) a sequence of nucleotides which is at least 80% identical to SEQ ID NO:11 or SEQ ID NO:13;
xii) a sequence of nucleotides which is at least 80% identical to SEQ ID NO:50, or SEQ ID NO:51; and
xiii) a sequence of nucleotides which is at least 80% identical to SEQ ID NO:55, or SEQ ID NO:56
wherein the polynucleotide encodes a peptide exhibiting antifungal and/or antibacterial activity.

7. (Deleted)
8. (Previously Presented) A vector comprising the polynucleotide of claim 6.
9. (Previously Presented) A host cell comprising the polynucleotide of claim 6.
10. (Previously Presented) The host cell of claim 9 which is a plant cell.
11. (Withdrawn-Currently Amended) A process for preparing a substantially purified peptide which comprises [a] consecutive amino acids, the sequence of which is selected from the group consisting of:
 - i) ~~an amino acid sequence as provided in~~ SEQ ID NO:4,
 - ii) an amino acid sequence which is at least 80% identical to SEQ ID NO:4,
 - iii) ~~an amino acid sequence as provided in~~ SEQ ID NO:5,
 - iv) an amino acid sequence which is at least 80% identical to SEQ ID NO:5,
 - v) ~~an amino acid sequence as provided in~~ SEQ ID NO:48,
 - vi) an amino acid sequence which is at least 80% identical to SEQ ID NO:48,

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vii) ~~an amino acid sequence as provided in SEQ ID NO:53,~~
viii) an amino acid sequence which is at least 80% identical to SEQ ID NO:53,
ix) a biologically active fragment of any one of i) to viii), and
x) a precursor comprising the amino acid sequence according to any one of i) to ix),
wherein the peptide exhibits antifungal and/or antibacterial activity, the process comprising cultivating a host cell according to claim 9 under conditions which allow expression of the polynucleotide encoding the peptide, and recovering the expressed peptide as a substantially purified peptide.

12. (Withdrawn) A composition comprising a peptide of claim 1, and one or more acceptable carriers.

13. (Previously Presented) A composition comprising a polynucleotide according to claim 6, and one or more acceptable carriers.

14. (Withdrawn) A method for killing, or inhibiting the growth and/or reproduction of a fungus and/or a bacteria, the method comprising exposing the fungus and/or bacteria to a peptide of claim 1.

15. (Currently Amended) A transgenic plant, the plant having been transformed with a polynucleotide according to claim 6, wherein the plant produces a peptide which comprises [a] consecutive amino acids, the sequence of which is selected from the group consisting of:
i) ~~an amino acid sequence as provided in SEQ ID NO:4,~~
ii) an amino acid sequence which is at least 80% identical to SEQ ID NO:4,
iii) ~~an amino acid sequence as provided in SEQ ID NO:5,~~
iv) an amino acid sequence which is at least 80% identical to SEQ ID NO:5,
v) ~~an amino acid sequence as provided in SEQ ID NO:48,~~

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vi) an amino acid sequence which is at least 80% identical to SEQ ID NO:48,
vii) ~~an amino acid sequence as provided in~~ SEQ ID NO:53,
viii) an amino acid sequence which is at least 80% identical to SEQ ID NO:53,
ix) a biologically active fragment of any one of i) to viii), and
x) a precursor comprising the amino acid sequence according to any one of i) to ix),
wherein the peptide exhibits antifungal and/or antibacterial activity.

16. (Withdrawn) A method of controlling fungal and/or bacterial infections of a crop, the method comprising cultivating a crop of transgenic plants of claim 15.

17. (Withdrawn-Currently Amended) A transgenic non-human animal, the animal having been transformed with a polynucleotide according to claim 6, wherein the animal produces a peptide which comprises [a] consecutive amino acids, the sequence of which is selected from the group consisting of:

- i) ~~an amino acid sequence as provided in~~ SEQ ID NO:4,
- ii) an amino acid sequence which is at least 80% identical to SEQ ID NO:4,
- iii) ~~an amino acid sequence as provided in~~ SEQ ID NO:5,
- iv) an amino acid sequence which is at least 80% identical to SEQ ID NO:5,
- v) ~~an amino acid sequence as provided in~~ SEQ ID NO:48,
- vi) an amino acid sequence which is at least 80% identical to SEQ ID NO:48,
- vii) ~~an amino acid sequence as provided in~~ SEQ ID NO:53,
- viii) an amino acid sequence which is at least 80% identical to SEQ ID NO:53,
- ix) a biologically active fragment of any one of i) to viii), and

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x) a precursor comprising the amino acid sequence according to any one of i) to ix),
wherein the peptide exhibits antifungal and/or antibacterial activity.

18. (Withdrawn) A method of treating or preventing a fungal and/or bacterial infection in a patient, the method comprising administering to the patient a peptide of claim 1.

19. (Deleted)

20. (Withdrawn) An antibody which specifically binds a peptide of claim 1.

21. (Withdrawn-Currently Amended) A method for killing, or inhibiting the growth and/or reproduction of a fungus, the method comprising exposing the fungus to a peptide which comprises [a] consecutive amino acids, the sequence of which is selected from the group consisting of:

- i) an amino acid sequence comprising residues 25 to 67 of SEQ ID NO:14,
- ii) ~~an amino acid sequence as provided in~~ SEQ ID NO:17,
- iii) an amino acid sequence comprising residues 26 to 67 of SEQ ID NO:15,
- iv) an amino acid sequence which is at least 75% identical to any one of i) to iii),
- v) an amino acid sequence comprising residues 26 to 66 of SEQ ID NO:18,
- vi) an amino acid sequence which is at least 50% identical to v), and
- vii) a biologically active fragment of any one of i) to vi).

22. (Deleted)

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23. (Withdrawn-Currently Amended) A method of controlling fungal infections of a crop, the method comprising cultivating a crop of transgenic plants which produce a peptide which comprises [a] consecutive amino acids, the sequence of which is selected from the group consisting of:

- i) an amino acid sequence comprising residues 25 to 67 of SEQ ID NO:14,
- ii) an amino acid sequence comprising residues 25 to 66 of SEQ ID NO:16,
- iii) ~~an amino acid sequence as provided in SEQ ID NO:17,~~
- iv) an amino acid sequence comprising residues 26 to 67 of SEQ ID NO:15,
- v) an amino acid sequence which is at least 75% identical to any one of i) to iv),
- vi) an amino acid sequence comprising residues 26 to 66 of SEQ ID NO:18,
- vii) an amino acid sequence which is at least 50% identical to vi), and
- viii) a biologically active fragment of any one of i) to vii).

24. (Deleted)

25. (Withdrawn-Currently Amended) A method of treating or preventing a fungal infection in a patient, the method comprising administering to the patient a peptide which comprises [a] consecutive amino acids, the sequence of which is selected from the group consisting of:

- i) an amino acid sequence comprising residues 25 to 67 of SEQ ID NO:14,
- ii) ~~an amino acid sequence as provided in SEQ ID NO:17,~~
- iii) an amino acid sequence comprising residues 26 to 67 of SEQ ID NO:15,
- iv) an amino acid sequence which is at least 75% identical to any one of i) to iii),

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- v) an amino acid sequence comprising residues 26 to 66 of SEQ ID NO:18,
- vi) an amino acid sequence which is at least 50% identical to v), and
- vii) a biologically active fragment of any one of i) to vi).

26. (Deleted)

27. (Withdrawn) A kit comprising a peptide of claim 1.

28. (Withdrawn) The substantially purified peptide of claim 1 which comprises [a] consecutive amino acids, the sequence of which is selected from the group consisting of:

- i) an amino acid sequence which is at least 85% identical to SEQ ID NO:4,
- ii) an amino acid sequence which is at least 85% identical to SEQ ID NO:5,
- iii) an amino acid sequence which is at least 85% identical to SEQ ID NO:48,
- iv) an amino acid sequence which is at least 85% identical to SEQ ID NO:53,

wherein the peptide exhibits antifungal and/or antibacterial activity.

29. (Currently Amended) ~~The An isolated polynucleotide according to claim 6, the polynucleotide comprising [a] consecutive nucleotides, the sequence of which is~~ selected from the group consisting of:

- i) a sequence encoding a peptide comprising [a] consecutive amino acids, the sequence of which is selected from the group consisting of:
 - a) an amino acid sequence which is at least 85% identical to SEQ ID NO:4,
 - b) an amino acid sequence which is at least 85% identical to SEQ ID NO:5,

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c) an amino acid sequence which is at least 85% identical to SEQ ID NO:48,
d) an amino acid sequence which is at least 85% identical to SEQ ID NO:53,
ii) a sequence of nucleotides which is at least 85% identical to SEQ ID NO:9, SEQ ID NO:10, or SEQ ID NO:12;
iii) a sequence of nucleotides which is at least 85% identical to SEQ ID NO:11 or SEQ ID NO:13;
iv) a sequence of nucleotides which is at least 85% identical to SEQ ID NO:50, or SEQ ID NO:51; and
v) a sequence of nucleotides which is at least 85% identical to SEQ ID NO:55, or SEQ ID NO:56,
wherein the polynucleotide encodes a peptide exhibiting antifungal and/or antibacterial activity.